Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

The Examiner rejected claims 48-50 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for the recitation of the term "charged." Applicants have amended claim 48, from which claims 49-50 depend, to no longer recite "charged." The claims, as amended, recite "incubated in the presence of an organic polycation." Applicants assert that this language is clear. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 102

The Examiner rejected claims 36, 38-40, 42 and 43 under 35 U.S.C. § 102(e) as allegedly being anticipated by Dow *et al.*, U.S. Patent No. 5,705,151. Applicants respectfully traverse this rejection.

The Examiner stated that

> Dow et al. teach allogeneic tumor cells that have been transfected with nucleic acids encoding a superantigen . . . wherein said cells are used as a tumor vaccine. Haeffner et al. establish that the art recognized that superantigens can be presented in the context of MHC class I when presented by cells which do not express MHC class II . . . Thus, it is an inherent property of the tumor vaccine disclosed by Dow et al. that the superantigen produced by the transfected tumor cell is presented in the context of MHC class I.

Paper No. 16, page 3.

Claim 36, from which claims 38-40, 42 and 43 depend, recites that the tumor cells comprise peptides which bind the peptide binding fork of the MHC class I molecules.

Applicants submit herewith Rovira *et al.*, *Eur. J. Immunol. 29*:1571-1580 (1999), attached as Exhibit A. According to Rovira *et al.*,

> [t]he physical association between UDA [a superantigen] and MHC-I or MHC-II molecules implicates the lectin-binding site of UDA and carbohydrate structures on MHC molecules . . . Potential glycosylation sites are located outside the peptide binding groove on both MHC-I and MHC-II, supporting the hypothesis that UDA does not bind to the peptide groove.

Rovira *et al.*, page 1576, column 2.

One of the limitations of the claims is that the peptide bind to the peptide binding fork of the HLA subtype. As Rovira *et al.* show, superantigens bind outside of the peptide binding fork of MHC class I. Also, the claims, as amended, clarify that the peptides have been incubated with the cells in the presence of organic polycation. Dow *et al.* does not teach the incubation of cells with the peptides. Rather, Dow *et al.* teaches only the transfection of cells with superantigens. Additionally, the claims, as amended, include the limitation that cells have not been transfected with DNA coding for the peptide. Dow *et al.* only teach cells which have been transfected with superantigen.

Since all of the limitations of the claims are not met by Dow *et al.*, including binding the peptide binding fork of MHC class I, incubating in the presence of organic polycation, and the absence of transfection of DNA encoding the peptides, the present claims are not anticipated. Accordingly, withdrawal of the rejection is respectfully requested.

The Examiner also rejected claims 36, 38-40, 42-44, and 48-50 under 35 U.S.C. § 102(a) as allegedly being anticipated by Schmidt *et al.*, *Proc. Natl. Acad. Sci. USA 93*:9759-9763 (1996). The Examiner stated that this rejection can be overcome by supplying a certified English language translation of the foreign priority documents. Applicants will submit said translations upon receipt by the undersigned.

Rejections under 35 U.S.C. § 103

The Examiner rejected claims 36, 38-40, 42-44, and 48-50 under 35 U.S.C. § 103(a) as allegedly being obvious over Fearon *et al., Cancer Res. 48*:2975-2980 (1988) in view of Townsend *et al.*, *Cell 39:*13-25 (1984), Dow *et al.*, U.S. Patent No. 5,705,151, Häffner *et al.*, *Proc. Natl. Acad. Sci. USA 93*:3037-3042 (1996) and "prior art disclosed in the specification (see page 3)." Paper No. 16, page 4. Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, the Examiner must show that the prior art suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process, and that the invention could be attained with a reasonable expectation of success. See *In re Vaeck*, 20 U.S.P.Q.2d (BNA) 1438, 1442 (Fed. Cir. 1991). Any suggestion and reasonable expectation of success must come from the prior art of record, and not Applicants' disclosure. *Id.*

The Examiner states that "[r]egarding the term 'charged', while it is unclear what said term means, for the purposes of this rejection it will be interpreted as encompassing a peptide added to a cell via nucleic acid transfection." Paper No. 16, page 4. Applicants have amended the claims to recite "incubated" instead of "charged." This clarifies that the peptides are not added to the cell via nucleic acid transfection. Further, the claims, as amended, include the limitation that the tumor cells are not transfected with DNA encoding the peptide.

As stated in the specification, at page 7,

> [i]n contrast to approaches in which the tumour antigen or the peptide derived from it is presented on the cell surface by the fact that it has been transfected with a DNA coding for the

> protein or peptide in question . . . the intention [of the present invention] is to provide a vaccine which triggers an efficient immune response whilst being simpler to manufacture.

Thus, the present invention represents an improvement over the prior art in that the peptide which is presented by the MHC class I molecule is added to the cells exogenously, rather than by DNA transfection.

Fearon *et al.* is directed to transfection of murine colon carcinoma cells with a gene encoding for the hemagluglutination antigen (HA) of influenza virus. Nothing in Fearon *et al.* teaches or suggests making a tumor vaccine wherein the HA antigen is not transfected into the cells, but instead is incubated with the cells in the prescence of organic polycation. None of the other art relied upon by the Examiner (Townsend *et al.*, Dow *et al.*, Häffner *et al.*, or the prior art disclosed in the specification on page 3) cures the deficiency of Fearon *et al.*

As discussed above, Dow *et al.* is directed to the transfection of tumor cells with a superantigen. Townsend *et al.* is directed to the transfection of murine cells with hemagglutinin. Häffner *et al.*, which published after the priority date of the captioned application, is directed to the binding of superantigens to MHC class I molecules. None of the art relied upon by the Examiner teaches or suggests modifying Fearon *et al.* to arrive at the claimed invention. Specifically, none of the art suggests adding the peptide of Fearon *et al.* to the cells in the presence of an organic polycation instead of transfection.

The claims are not rendered obvious by any of the art relied upon by the Examiner. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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